



# DRILL



## 4·7-INCH Q.F. GUN.

(FIXED ARMAMENTS.)



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## DRILL FOR 4·7-INCH Q.F. GUN (FIXED ARMAMENT).

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AMENDMENTS TO PAMPHLET DATED FEBRUARY, 1909.

Page 2 :—

Lines 6 and 7. *Delete* “ 2 keys base fuze and plug (when required),”

Page 5 :—

Line 28. *Delete* “ short circuit needle to breech screw and ”

Line 24. *Delete*, and *insert*,

“ and if there is a deflection, change to percussion unless the cause of short circuit is at once discovered, e.g., a blow back. If there is no deflection, short circuit needle to breech screw and press lever, if there is no deflection, change to percussion.”

War Office, S.W.

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## DRILL FOR 4·7-INCH Q.F. GUN.

### (FIXED ARMAMENTS.)

The Gun Detachment consists of a Gun Captain, Gun Layer, Setter\* and seven other gun numbers.

It falls in and is told off in the usual manner.

For the duties of Gun Captain and Gun Layer see "Garrison Artillery Training."

#### AMMUNITION SUPPLY.

Cartridges are supplied from recesses (of dépôts if required) in the emplacement and thence by hand to the gun platform. A proportion of these should be prepared for percussion firing before action.

Projectiles are supplied from recesses in the emplacement and from dépôts which should be arranged round the gun platform under cover of the parapet.

There is no lift supply.

6 and 8, working alternately, supply 4 with cartridges, and 5 and 7 lift projectiles on to the gun platform for 3. This supply must be made intelligently, as the gun is traversed, from the most convenient recess or dépôt.

Empties will be stacked by 6 and 8 without obstructing the working numbers at the gun.

#### TO PREPARE FOR ACTION.

Gun Group Commander.

Gun Captain.

"A Group."

"A 1."

"Prepare for Action."

"Prepare for Action."

At this order stores are brought up as follows :—

Gun Group Commander.—Gauge protrusion striker.

Gun Captain.—A rammer (except when gun is fought as an anti-torpedo-boat gun).

Gun Layer.—Sights, firing battery (if not already on the mounting), pistol grip, and box of spare parts and tools (if required).

2 and 3.—One tray, stores, complete,† lever lengthening cam lever (for guns fitted with cam levers), and waste.

\* The Setter will be found from the 50 per cent. spare.

† The tray, stores, contains the following :—

	Number.		Number.
Chalk, pieces	....	1	Wrenches—continued—
Screwdriver, 4-inch	....	1	" F "
Striker, E and P	....	1	Firing-hole bush
Extractor, cartridge	....	1	Spanners—
Cans, oil, lubricating	....	1	Buffer, 150
Wrenches—			McMahon
" E "	....	1	Tube boxes
" D "	....	1	Lanyard

**4.**—Percussion tubes, drill cartridge with adapter and electric tube, or primer.

**6** and **8.**—Keys of cartridge and shell recesses, key inserting primers, key removing primers, and cartridge holder. For drill a drill cartridge, adapter, and drill tube.

**5** and **7.**—Brush, 2 keys fuze universal, 2 keys base fuze and plug (when required), and grease box. For drill a drill shell and shell extractor.

The following stores will be brought up and such others as are considered necessary locally :—

Clinometers .. .. .. .. ..	1 per work.
Bar testing sight .. .. .. ..	1 per work.
Instruments, testing primary batteries or voltmeter .. .. .. ..	1 per work.
Hammers, claw .. .. .. ..	1 per group.
Whistle .. .. .. ..	1 per group.

The Gun Group Commander will personally test the protrusion of the strikers of all the guns in his group with the breech open and the lever in the closed position. When the lever is in the open position he will see that the point of the firing pin is within the face of the breech screw ; he will also examine the nuts on the sheath and those on the striker needle to see that they are properly tightened up.

"N.B.—To gauge the protrusion of the striker, swing the breech screw and carrier into the loading position, then release the catch retaining breech screw by hand, and turn the screw into the locked position. Make sure that the striker is correctly assembled, insulating washers in position, needle and assembling nuts screwed home. The striker must then be pulled to the rear, but only with sufficient force to take up any clearance due to wear in the thrust collars. The 'gauge, striker, protrusion,' will then be applied over the point of the striker. It should also be ascertained, by inspection, that the point of the needle is within the face of the bush in the breech screw when the breech is open."

The Gun Captain will satisfy himself that the buffer is properly connected up, not leaking at the gland, and contains the correct amount of oil, that the capsquares are properly secured, and that the lubricators on the top of the cradle are filled with oil. When the breech is opened he looks to see that the bore is clear.

The Gun Layer fixes the sights in the cradle, sees that they fit and work properly, and that the sight bracket and carrier is firmly attached to the mounting ; tests, and if necessary, adjusts the automatic sight, attaches the firing battery to the mounting (if not already on), places the pistol grip in position, makes the necessary connections and tests the firing circuit. At night he sees that the lamps are in good working order. He sees that the elevating and traversing gears are oiled and in good order.

**4** removes the breech and muzzle covers, attaches tube box with percussion tubes to left side of mounting, if the box is already on the mounting places tubes in box, and loads a drill cartridge fitted with an electric primer or adapter and electric tube as soon as the breech is opened.

**2** places the loop of the cartridge extractor over his left wrist, and opens the breech thus :—

- (a) For guns fitted with three-motion mechanism, he raises the cam lever to its full extent with his right hand, forces it as far from him as it will go, and, still holding the lever, swings the breech-screw clear from the breech,

(b) For guns fitted with single-motion mechanism, he grasps the lever with his right hand and pulls it towards him as far as it will come ; this unlocks and withdraws the breech screw.

He then examines the breech screw and threads of the breech, sees that they are clean and free from burrs, and lubricates the threads with a slight film of oil.

**6** and **8** go to the recesses or dépôts and prepare to issue cartridges. For drill they place the drill cartridge in a convenient position for use.

**5** and **7** go to the shell dépôts or recesses and prepare shell for loading i.e., clean and fuze them, and remove safety pins. For drill, they place the drill shell and extractor in a convenient position for use.

With single-motion mechanism the safety arrangements of the gun can now be tested under the superintendence of the Gun Group Commander, as follows :—He will direct the Gun Layer to keep the lever indicator pressed and trigger pulled while **2** closes the breech by pushing the lever from him with his right hand until the breech screw is locked. In this position the primer should not fire, as the safety stop is still holding the striker back. The final movement of the lever and safety stop in fully closing the breech should fire the primer. The breech should be closed with a continuous and deliberate motion, no attempt being made to hurry until the threads of the breech screw are fairly engaged with those of the breech. If the breech is slammed, the breech screw rebounds and the threads of the screws become burred.

For guns fitted with three-motion mechanism, **2** closes the breech thus :—He takes hold of the cam lever with his right hand, swings the breech screw into the gun (being careful to see that **3**'s hand is clear), preventing it from rebounding with his left hand, pulls the cam lever towards him as far as it will come, and folds it down.

**2** then opens the breech, extracts the drill cartridge, using the extractor with his left hand, and closes the breech again.

After each number has completed his work he takes post as follows :—

#### AS AN ANTI-TORPEDO-BOAT GUN.

Gun Captain in rear of the shoulder piece.

**2** in rear of breech in prolongation of right side of gun facing the layer. His feet should be well separated and knees bent slightly. He should stand at such a distance that when opening the breech to the fullest extent with his right hand (palm to the left) closed over breech mechanism lever, the carrier will just not jar against the gun and throw the Layer off the target.

**3** stands on the left side of the gun facing **2**, his feet well separated and parallel to the axis of the gun.

**4** on the right of **3** in a similar position, his left foot in front of and on the left of **3**'s right foot.

**5, 6, 7** and **8** as above detailed.

The Gun Captain collects reports from each number regarding any damage or deficiency. He then places his men under cover and reports to the Gun Group Commander "Bore clear ; ready to load."

#### To LOAD.

Gun Group Commander.

"A Group."  
".... Load."

Gun Captain.

"A 1."  
".... Load."

*Electric firing.*—**2** opens the breech with his right hand without jarring the carrier against the gun. Holding the extractor in his left hand,

closed forefinger and thumb close up to the horns, he applies it under the primer or adapter, and with a quick jerk ejects the empty cartridge case over his left hand. (In using the extractor he must avoid turning his wrist and so throwing empty cases out sideways and end over end, as they may injure the numbers in rear.)

**5 or 7** supply **3** with a projectile fuzed and with safety pin removed, **3** uncaps fuze, picks up projectile and holds it with the C.G. on his left arm and the clenched fist\* of his right hand on the base. The projectile should be held in prolongation of the bore of the gun, the body well drawn back on the hips. With a smooth rapid push the projectile should be forced into the rifling, **4** has meanwhile picked up a cartridge supplied to him by **6 or 8** and follows the projectile home with it.

**2** closes the breech with his right hand, places his right hand on top of the gun and calls "Ready."

#### WHEN USED AS A MEDIUM GUN.

The details is as above with the following exceptions:—

The Gun Captain stands in rear of the breech on the right of **3** and holds the rammer at his right side, right hand back up, left hand back down. **4** stands slightly to the right rear of **3**.

As soon as empty cartridge case is extracted **3** inserts projectile, Gun Captain rams it home and withdraws rammer smartly. **4** loads cartridge.

The Setter takes post at the left side of Layer.

*Percussion firing.*—As above, with the following exceptions:—

After **4** has entered the cartridge with adapter, but no tube, **2** closes the breech to ascertain that the charge is home, then opens the breech carefully so as not to work the extractor, and when **4** has put in the tube closes it carefully to avoid jarring the tube. He then cocks the striker by pulling it to the rear till caught by the trigger. **4** attaches the lanyard, and stands ready to fire. **2** gives the word "Ready."

#### TO LAY AND FIRE.

- |   |                                      |
|---|--------------------------------------|
| 1. Auto-sights<br>(a) Electric Firing<br>(b) Percussion Firing<br><br>2. Rocking Bar Sights<br>(a) Electric Firing<br>(b) Percussion Firing | } See "Garrison Artillery Training." |
|---|--------------------------------------|

The normal method of laying will be by auto-sights; should these be disabled or the target beyond their effective range, rocking bar sights will be used.

#### MISSFIRES.

Gun Group Commander.

Gun Captain.

"A 1."

"....Missfire."

*Electric firing.*—If, when the Gun Layer presses the trigger, the gun fails to fire, he will call out "Close the breech," and at the same time release the trigger; **2** will give the L.B.M. a smart tap, and will ascertain by inspection that it is home; he then calls "Ready." The Gun Layer will then again press the trigger, and if the gun again missfires, he will hold the trigger pressed while he counts four in slow time; and, if it fails to fire, will call "A 1, Missfire," at the same time releasing the trigger. A pause of five minutes will be made (during which time the detachment, except the Gun Captain and **2** and **3** will take cover).

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\* It is advisable for **3** to wear a glove.

NOTE.—In peace practice, the Gun Layer will keep the gun layed in a safe direction.

At the end of five minutes, all men, except Gun Captain, and all cartridges, will be removed to a position of safety.

The Gun Captain will then place himself clear of the breech on the left side and open the breech by applying the piasaba brush to the lever breech mechanism. After a pause of one minute the Gun Captain, still keeping clear of the breech, will remove the cartridge with extractor and throw it into a bucket of water which has meanwhile been brought up by one of the higher numbers.

To locate whether the fault is in the primer (or tube) or the circuit proceed as follows :—

If no deflection is given by pistol grip, during the pause of five minutes, the Layer, 2 and 3, will look round the circuit, keeping clear of recoil, and see if the fault is palpable and immediately remediable (such as lever breech mechanism not home, contacts "A" or "B" worked out, binding screws loose, &c.). If so, the fault will be remedied and fire continued. At the end of the minute, as soon as the cartridge is extracted, short circuit point of firing pin and breech screw, and see if there is a deflection. If there is, continue with electric firing, if not, change to percussion.

If deflection is given by pistol grip look for a short circuit during pause, and if not found, as soon as cartridge is extracted put lever breech mechanism in closed position, short circuit needle to breech screw and press lever ; if there is no deflection, change to percussion.

*Percussion firing.*—On a missfire occurring, the Gun Layer will call out "A 1, Missfire." 2 re-cocks and gives the L.B.M. a smart tap, makes fast the lanyard, and the tube is tried again. Should it again fail to fire, the detachment, except the Gun Layer, should take cover, and proceed as for electric firing. The striker will be examined, a new cartridge will be put in, the breech closed, and the cartridge tried. Should this also missfire, after a further pause as for electric, the striker will be removed and sent away for examination and repair, if necessary, and a fresh one substituted.

It is most important that percussion firing should not be resorted to except as a last resource, and every care should consequently be taken of the firing circuit. At the same time, it is even more important that guns should be kept in action. If, therefore, a missfire occurs, steps should at once be taken to see whether the fault lies in the primer (or tube) or the circuit, and if the latter (if not immediately remediable) change should at once be made to percussion firing, and at the first pause in the firing, the fault should be discovered and rectified.

For disposal of missfires, see "Regulations for Magazines and Care of War Matériel."

For "ACTION," "UNDER COVER," "CEASE FIRING," "REPLACEMENT OF CASUALTIES," and "DETACHMENT REAR," see "Garrison Artillery Training."

The positions under cover are as follows :—

2, 4, and Gun Captain on the right of the gun.

3, Gun Layer and Setter on the left of the gun.

5, 6, 7, and 8 in rear of the gun.

#### TO CEASE FIRING AND REPLACE STORES.

All stores are replaced by the numbers who brought them up, and the gun is depressed about 4 degrees by the Gun Layer ; the Detachment then falls in at "Detachment Rear."